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ABSTRACT

One of the twelve exemplary programs summarized in the Introduction to Right to Read's "Effective Reading Programs: Summaries of 222 Selected Programs" (CS001934), this program uses an organized phonics system to increase the reading readiness of one school's kindergarten children, many of whom have bilingual parents. In a careful sequence of activities, the children learn to name, sound, and write one letter at a time. The program includes a number of devices to motivate pupils and catch their interest, including an imaginary character from outer space who provides frequent rewards. Each child, when ready, is encouraged to begin reading stories and books, and receives special rewards for these achievements. (WR/AIR)

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PROGRAM AREA:

Reading

PROJECT TITLE:

Alphaphonics Reading Readiness Training Program

LOCATION:

South San Francisco, California

SOURCES AND LEVEL OF FUNDING:

(The program is able to operate within the cost of the regular district program.)

PROGRAM START DATE:

1968

BRIEF DESCRIPTION OF PROJECT:

Goals and objectives. The program was developed to increase reading achievement in the first grade by introducing reading readiness to kindergarten students through an organized phonetics system.

Context. Ponderosa School is located in a city of 47,000 adjacent to the metropolitan area of San Francisco. About one third of the students have a strong second-language influence (Latin American or Italian backgrounds). The children, all white, come from middle-income families ($6000 to $15,000 average annual income).

Program description.

Grade level(s), years of operation, size--In operation for more than five years, the program is serving 55 kindergarteners during the 1973-74 academic year. The kindergarten classes are located in one school.

Staffing--The program staff required for this number of participants consists of the following: Administrator (1, parttime), teachers (2, full time), and parent volunteers (2, parttime).

Curricula, material, facilities--All procedures and most materials required for the instructional program are contained in the Alphaphonics Book. This document is a teacher's manual and a collection of student worksheets; teachers duplicate copies of these worksheets for each day's lesson.

Major program features and instructional features include the following: (1) sequential learning (Name it, sound it, find it, trace it, write it.); (2) immediate correction and positive feedback from teacher; (3) systematic review built into lessons; (4) game-like presentation.

To capture the children's interest, the program utilizes an imaginary character from outer space, ASTRO. ASTRO comes to the classroom every day and takes a surprise out of his bag to help the children learn the names and sounds of the letters of the alphabet. The learning sequence

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EVIDENCE OF EFFECTIVENESS:

Selection of students. Experimental students were those enrolled in kindergarten during the 1968-69 school year in the target school. Control students were kindergarten students present in the other 12 elementary schools in the district. Since the goal of the evaluation effort was to demonstrate the longitudinal impact of exposure to Alphaphonics during kindergarten, the 36 Alphaphonics (i.e., treatment) and the 452 control students included in the analyses were only those (1) who remained in the original schools for grades one, two and three, (2) who were present on days of state and district testing, (3) who were not certified for special learning disability classes and (4) who had IQ test scores in the 80-139 range.

The losses due to attrition and to missing criterion data were large (approximately 52%). Enrollment data compiled at the school level, however, indicated that the elementary schools did not differ markedly with respect to losses due to attrition. Additional analyses also showed that the Alphaphonics and control group analyzed did not differ significantly in terms of (1) presence of a foreign language in the home, (2) father's occupational level, (3) employment status of mother, and (4) IQ as measured upon entrance to grade one. All of these factors, when taken together, suggest that the attrition and missing data problems (to be expected in longitudinal analyses of almost all data collected in public schools) will probably not lead to substantial biases in the results obtained.

Comparison methods. The treatment was not implemented in a manner that would permit random assignment of students to Alphaphonics or control conditions since the program was developed by the teachers of the target school. Although small differences existed among the student populations of these schools, as they do in most school districts, the students in the analysis sample from the target school did not systematically differ from those in the 12-school control group with respect to a number of educationally relevant variables (i.e., ratio of boys to girls, IQ level, foreign language in the home, father's occupational level, and employment status of mother).

Measures. Criterion measures were obtained by means of state and district mandates tests. All of the instruments are well known and their reliabilities are moderate to high. They also appear to be quite valid for the assessment of reading performance.

Data concerning the presence of a foreign language in the home, father's occupational category and mother's employment status were all obtained from enrollment information collected from parents by each school and maintained in each student's cummulative folder.

Data collection. Since only state and district mandated tests were involved, testing conditions across all 13 schools were probably fairly uniform. Administration dates were at comparable times each year.

Data analysis. The Alphaphonics treatment group was compared to each of the 12 control schools separately and with a pooled 12-school control group by means of t tests. As noted above, no statistically significant differences were found between the treatment group and the combined control group with respect to IQ, ratio of boys to girls, father's occupational level

is based on six lessons for each letter of the alphabet. For example, in a #1 lesson, children learn to name the letter. The letter is drawn on a pennant ASTRO holds in a cartoon on the worksheet. They then learn to make the letter's sound and to locate an upper and a lower case example of the letter elsewhere on the worksheet. The remaining four or five worksheet lessons for that letter reinforce these learnings through such activities as color coding (circle A in red), classifying (apples go under the apple tree), and heavy repetition of letter names and sounds.

Systematic review is built into the lessons. For example, all #6 lessons are reviews of learning up to that point. If a child does poorly on some aspect (say, writing) of the review, past #4 (writing) lessons are pulled, and the student receives special help.

Early in the year, to insure understanding and success, the teacher takes the students step-by-step through the worksheet activities. When ready, students proceed with assigned worksheets at their own pace. Teachers follow a planned scheme for reinforcing children's performance in the lesson sequence. At the beginning of the year, only positive reinforcement is given (happy faces drawn on children's work samples). After the first one third of the year, a sad face may be drawn on a child's paper, but only when the student is not working up to his capabilities. ASTRO figures prominently in the reward system--he supplies badges for children to wear home (a bear for B) and food presents (Applesauce for A).

The program can be carried on in any kindergarten classroom without special modification of facilities.

Time involved--Close to an hour each day is devoted to the Alphaphonics program and its related activities. A typical schedule for this period is as follows:

Sing alphabet song.

Sing poem song (alliteration re particular letter sound).

CLASS DISCUSSION (10 min. minimum, 30 min. maximum)

INDIVIDUAL WORK (use of worksheets, immediate teacher feedback)

Sing poem song (same as above).

OCCASIONAL ADD-ON ACTIVITY--drama, cooking applesauce, etc.

A special event every Wednesday, Thursday, and Friday is the presentation of gifts by the children to ASTRO. These gifts are objects or pictures of objects beginning with a specified letter's sound.

Parent involvement--Until this year, no such component was included as part of the program. This year parent volunteers in the classroom work with individuals or small groups of students who are having trouble. In the fall, a letter is mailed to parents to tell them about program activities and to encourage them to reinforce at home the child's learning experiences at school.

Preservice/inservice training--In this particular situation, no inservice training has been required. However, teachers must be thoroughly familiar with the carefully detailed procedures and materials contained in the Alphaphonics Book.

Cost. No cost breakdown is maintained by the program because it operates within the cost of the regular district program. The school principal, at our request, attempted to get a per-pupil cost figure for the district's kindergarten program but found that local accounting practice did not provide the necessary figure. Instead, a K-6 per-pupil cost was given, $921 per pupil based on 1972-73 records. We were told that this is definitely higher than per-pupil operating cost for the kindergarten program. Even the cost of materials for a class of 30 (a standard cost item we ask for) could not be supplied because the Alphaphonics Book has not yet been published commercially. Teachers estimate that the book would retail for about $15, but this figure seems low to us.

EVIDENCE OF EFFECTIVENESS: (See attached section.)

and mother's employment status. Nevertheless, the Alphaphonics children surpassed the 12-school combined control group with respect to Reading Readiness (measured at the end of kindergarten) and with regard to reading achievement grades one, two and three (all at $p < .001$). The magnitude of the impact of the treatment is shown below as the ratio of the mean difference to the pooled-standard deviation, a sort of standardized mean difference. This table indicates that the differences were indeed substantial.

Variable	Grade	Administration Date	Ratio
Reading Readiness	K	5/69	.896
Reading Achievement	1	5/70	1.137
Reading Achievement	2	5/71	.904
Reading Achievement	3	5/72	1.069

These results were paralleled by statistically significant differences ($p < .001$) between the Alphaphonics school and almost all of the individual control schools. Although nine of the 48 comparisons between the treatment school and the 12 control schools (for four dependent variables) were not significant at $p < .001$, seven of these were significant at $p < .05$ and all remaining non-significant differences favored the control group. These tests, therefore, confirmed the primary hypotheses of the evaluation effort.

Inspection of the means and standard deviations suggested another trend to the AIR reviewer. The variance in IQ scores for the students in the Alphaphonics school did not differ greatly from that computed for the other schools in the district and for the 12-school pooled control group. However, the variance of Reading Readiness in the controls was more than four times that of the treatment group. Although the discrepancies were smaller, differences in variances were also present for Reading Achievement measured at the end of grades one, two and three. The ratio of the variance of the combined controls to the Alphaphonics group for these measures is shown below.

Variable	Grade	Ratio of Variances
Reading Readiness	K	4.26
I Q	1	1.09
Reading Achievement	1	2.42
Reading Achievement	2	1.93
Reading Achievement	3	1.56

Differences in variances such as those shown above (especially for Reading Readiness) can lead one to question the validity of the t tests applied. Boneau, however, empirically demonstrated that when a larger sample is drawn from a population with a larger variance, that a given level of statistical significance tends to be reached fewer times than expected. This would suggest that the variance differences in the Alphaphonics evaluation would, if anything, lead to conservative findings. Another, more substantive interpretation, is also possible.

The Alphaphonics and the control group were not markedly different with

to IQ and background variables. Yet, the results presented indicate that the treatment not only increased the mean performance of this group, but decreased the variation among the students within the group as well. This trend was most marked immediately following the year of exposure to Alphophonics during kindergarten. The fact that discrepancies in variances occur from post-kindergarten Reading Readiness through grade three suggests that the original homogenizing influence of the Alphaphonics experience during kindergarten may be decreasing over time.

Other of the study's hypotheses received only mixed support. It had been hypothesized that the correlations of Reading Readiness and Reading Achievement with background variables would be lower for Alphaphonics children than for controls. Statistical tests of the differences in correlations were not conducted. Inspection of the Pearson r's computed, however, suggests that the results would be mixed.